

NEW GENERA AND SPECIES OF PARASITIC MITES OF THE SUPERFAMILY PARASITOIDEA

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Parasitic mites of the superfamily Parasitoidea have long been recognized as of economic importance. In fact, one species, the common chicken mite, *Dermanyssus gallinae*, was studied and described by Redi in the seventeenth century. That these mites may be agents in the transmission of disease was demonstrated some years ago in the case of the common rat mite, *Echinolaelaps echidninus* (Berlese), which was shown to transmit a disease-producing protozoan among white rats. Recently another species, the tropical rat mite, *Liponyssus bacoti* (Hirst), has been implicated in the transmission of a disease of man, endemic typhus.

A study of the 15 species described as new in this paper has thrown much new light on generic characters in the group; in fact, it has resulted in the description herein of five new genera and a re-description of six old ones. The separation of certain members of the family Dermanyssidae from those of Parasitidae has always been difficult. It is here suggested that as far as the mouth parts are concerned the dividing point between the two families be based upon the presence on the chelicerae of either true teeth or cheliceral setae. If either one of these characters is present, the genus should be placed in the Parasitidae; if both are absent, it should be placed in the Dermanyssidae.

Family PARASITIDAE

Subfamily LAELAPINAE

ACANTHOCHELA, new genus

Body thickly beset with short and rather stout setae. Fixed arm of chelicera with several recurved, fanglike setae. Ventral plates of female as follows: Sternal plate about as broad as long and provided with many setae and two pairs of pores in the form of slits; genitoventral plate of moderate size, not reaching to the anal plate, and 3-lobed posteriorly; anal plate longer than broad, broadly

rounded in front and with three setae, the front two of which are paired. Legs rather short; second pair stouter than the others. Coxae II with a pair of spines; other coxae without spines.

Type species.—*Acanthochela chilensis*, new species.

Remarks.—Differs from *Haemogamasus* Berlese in having several recurved, fanglike setae on the fixed arm of the chelicerae and from *Euhaemogamasus*, described as new in this paper, in having many setae on the sternal plate.

ACANTHOCHELA CHILENSIS, new species

PLATE 1, FIGURE 1

Body about twice as long as wide and well provided with short setae. Palpi extending forward to tips of first patellae. Chelicerae moderate, fixed chela of each somewhat swollen toward the apex and bearing four recurved, thornlike setae. Sternal plate as broad as long, front corners produced, acuminate, with two pairs of pore slits and about 16 setae arranged more or less in pairs. Genito-ventral plate over twice as long as broad, broadest between the last pair of coxae, and ending in three lobes, the two lateral ones acuminate and the central one rounded. Anal plate one and a half times as long as broad; anus situated less than its diameter from the front margin; paired anal setae situated behind anus, single anal seta much larger than paired ones and extending beyond tip of anal plate. Legs of moderate length; second pair stoutest; third pair smallest; only second coxae bearing spines. Length of female, 0.69 mm; width, 0.39 mm.

Type host.—*Didelphis elegans*.

Type locality.—Lota, Chile.

Type slide.—U.S.N.M. no. 1066.

Remarks.—Described from four females, collected by D. S. Bullock, September 20, 1929, from type host, an opossum, at the type locality. A very distinctive species.

Genus HAEMOGAMASUS Berlese, 1889

This genus, as restricted in this paper, may be described as follows: Body thickly beset with short, fine setae. Fixed arm of chelicera not provided with recurved, fanglike setae. Ventral plates of female as follows: Sternal plate usually large, provided with many setae, some of which are not arranged in definite pairs; genitoventral plate not 3-lobed posteriorly; anal plate longer than broad, broadly rounded in front, and with three setae, the front two of which are paired. Legs rather slender, second pair the stoutest.

Type species.—*Haemogamasus hirsutus* Berlese, 1889.

Remarks.—The genus *Haemogamasus* Berlese is here restricted to species in which the sternal plate of the female is provided with many setae and the fixed arm of the chelicera is without recurved, fanglike setae.

HAEMOGAMASUS STERNALIS, new species

PLATE 1, FIGURE 2

Body about twice as long as broad and somewhat pointed at both ends, thickly beset with fine, slightly curved, subequal setae. Epistome of medium size, branches straight and sharp pointed. Chelicerae moderate, fixed chela slightly surpassing movable one and bearing an inflated seta near its tip. Sternal plate broader than long, posterior margin festooned, and bearing about 20 setae, including a pair of stout ones at the anterior corners. Genitoventral plate fully three times as long as broad, lateral margins concave, and bearing several setae. Anal plate broadly rounded in front and angulate behind; anus situated centrally; paired anal setae situated at the level of the anterior margin of anus; unpaired anal seta, subequal to paired ones, situated one half the distance from the posterior rim of the anus to the apex of anal plate. Legs slender; anterior and posterior pairs subequal and longer than the other pairs; all coxae without spines. Length of female, 0.92 mm; width, 0.52 mm.

Type host.—*Blarina brevicauda talpoides*.

Type locality.—Adirondack Lodge, Essex County, N.Y.

Type (holotype) slide.—U.S.N.M. no. 1067.

Remarks.—Described from a single female specimen taken by Francis Harper, August 12, 1925, from the caudal region of the short-tailed shrew at the type locality. This species is most nearly related to *Haemogamasus alaskensis* Ewing, 1925. It differs from *H. alaskensis* in having the sternal plate poorly sclerotized and festooned behind and in having the sternal setae arranged in irregular transverse rows.

EUHAEMOGAMASUS, new genus

Body thickly clothed with short setae. Fixed arm of chelicerae not provided with recurved, fanglike setae. Ventral plates of female as follows: Sternal plate short, usually broader than long, and provided with two or three pairs of setae; genitoventral plate expanded and broadly rounded posteriorly, never reaching anal plate; anal plate longer than broad, broadly rounded in front, and with three setae. Legs rather slender; coxae without spines.

Type species.—*Euhaemogamasus onychomydis*, new species.

Remarks.—This genus is most nearly related to *Haemogamasus* Berlese but is separated from it in having only a few sternal setae (four or six) arranged in pairs. In addition to the type, two other new species are included in it.

EUHAEMOGAMASUS ONYCHOMYDIS, new species

PLATE 1, FIGURE 3

Vestiture typical of the genus. Chelicerae large and powerful, the fixed chela in the case of the female longer than the movable one, not inflated, but strongly curved at the tip and provided with four or five dull teeth. Epistome large, broad at the base, fringed with sharp processes, most of which are curved and some of which are branched. Sternal plate broader than long, front margin incurved, its six subequal, curved setae arranged in two divergent rows; genitoventral plate much dilated and evenly rounded posteriorly, bearing many short, subequal setae and an anterior, submarginal pair much larger than the others; anal plate small, the longest anal diameter being over a third the length of the plate; paired anal setae situated opposite the middle of the anus. Legs moderate; second pair decidedly the stoutest; last pair the slenderest. Length of female, 0.93 mm; width, 0.61 mm.

Type host.—*Onychomys* sp.

Type locality.—Oraibi, Ariz.

Type (holotype) slide.—U.S.N.M. no. 1068.

Remarks.—Described from type specimen (a female) taken from type host, a grasshopper mouse, which was collected at the type locality June 4, 1927, by Paul E. Trapier. The specimen came through the United States Biological Survey. This species differs from the other two of the same genus, described in this paper, in the size and shape of the sternal plate and also of the genitoventral plate.

EUHAEMOGAMASUS UTAHENSIS, new species

PLATE 1, FIGURE 4

Body rather poorly clothed with setae. Movable chela of chelicera stout, armed with strong teeth, fixed arm modified into a straight, toothless, feelerlike process. Sternal plate greatly reduced in size, over twice as broad as long, front margin indefinite; it bears only the middle pair of sternal setae; genitoventral plate about three times as long as broad, sides incurved, and bearing about 10 setae; anal plate egg-shaped in outline, anus centrally placed, paired anal setae situated at the level of the anterior margin of the anus. Peritremes extending forward to the front coxae. Legs slender; first and last pairs subequal, longer than the others; second pair of legs stoutest. Length of female, 0.88 mm; width, 0.56 mm.

Type host.—*Neotoma lepida lepida*.

Type locality.—Salina, Utah.

Type (holotype).—U.S.N.M. no. 1069.

Remarks.—Described from a female specimen taken from type host, a wood rat, collected at the type locality by J. S. Sanford, March 21, 1929. This species is very distinctive in having a sternal plate so reduced that it bears only two of the six sternal setae.

EUHAEMOGAMASUS OREGONENSIS, new species

PLATE 2, FIGURE 1

Body almost twice as long as broad. The two chelae of each chelicera of equal length; movable one curved and with two teeth, both being on the outer margin; fixed chela almost straight, with two teeth and an inflated seta near the tip. Epistome conspicuous, with fringe of slender, pointed, and sometimes branched processes. Sternal plate broader than long, both anterior and posterior margins strongly concave and lateral angles produced into conspicuous processes. Genitoventral plate swollen and broadly rounded posteriorly, bearing about 20 setae, the front marginal pair of which are much larger than the others. Anal plate broadly rounded in front and produced posteriorly into an angulate process; anus large, situated centrally; anterior pair of anal setae situated opposite center of anus. Second pair of legs slightly enlarged, third pair the longest and slenderer than the others. Length of female, 0.98 mm; width, 0.63 mm.

Type host.—*Phenacomys albipes*.

Type locality.—Netarts, Oreg.

Type slide.—U.S.N.M. no. 1070.

Remarks.—Described from two females taken from type host, a forest tree mouse, collected at Netarts, Oreg., by Rosaline R. Walker, December 6, 1930 (Bishopp no. 14989). This species is characterized particularly by the produced lateral angles of the sternal plate.

CYCLOLAELAPS, new genus

Body almost circular and not thickly beset with setae; dorsal plate not sculptured, or but slightly so. Chelicerae without brush of setae, fixed arm without recurved, fanglike setae. Sternal plate of female broader than long, with two pairs of pores and three pairs of stout setae; genitoventral plate never reaching anal plate, provided with a single pair of setae; anal plate broad, rounded in front, pointed behind, and bearing three setae; metapodal plates very small, oval. Legs short, stout; coxae II and III each provided with a prominent spine or spur.

Type species.—*Cyclolaelaps circularis*, new species.

Remarks.—This genus is related to *Heterolaelaps* Hirst. It differs from *Heterolaelaps* in having but a single pair of setae on the genitoventral plate instead of five pairs. The type species only is included.

CYCLOLAELAPS CIRCULARIS, new species

PLATE 2, FIGURES 2-4

Body almost circular but observed to be slightly pointed in front and behind and sparsely clothed with rather short, spinelike setae, which are more conspicuous near the margin. Chelicerae with rather small chelae; movable chela much stouter than fixed one and surpassing the latter, with three teeth exclusive of the terminal process; fixed chela slightly curved, with two teeth exclusive of the terminal process, cheliceral seta absent. Sternal plate about twice as broad as long, front margin convex, posterior margin concave, the sternal setae subequal, curved, and forming two divergent rows. Genitoventral plate almost twice as long as broad, the single pair of setae extending to apex. Anal plate subtriangular, anal opening situated in front of center of same, paired anal setae shorter than unpaired one and situated on a level with posterior margin of anal opening. Metapodal plates oval, in diameter equal to that of anus. Legs stout; last pair longest; coxae I, II, and IV each with a single spinelike seta; coxae III each with two spinelike setae. Length of female, 0.65 mm; width, 0.55 mm.

Type host.—*Peromyscus truei truei*.

Type locality.—Salina, Utah.

Type slides.—U.S.N.M. no. 1071.

Remarks.—Described from two females taken from type host, the large-eared deer mouse, collected at the type locality by J. S. Stanford, one on November 22, 1928, and one on December 7, 1928.

Genus MACROLAELAPS Ewing, 1929

Body stout, but longer than broad, not subcircular; well clothed with short, spinelike setae; dorsal plate of female sculptured. Chelicerae each with a brush of setae attached near the base of the movable arm; fixed arm without recurved, fanglike setae. Sternal plate of female broad, with two pairs of pores and three pairs of setae; genitoventral plate not reaching anal plate; anal plate about as broad as long, broadly rounded in front and pointed behind, and provided with two paired and one unpaired setae. Legs stout, provided with spinelike setae; each coxa with one or two short, peglike spines.

Type species.—*Laelaps sanguineus* Vitzthum.

Remarks.—Species of this genus are the largest of any belonging to the subfamily Laelaptinae. The genus is related to *Geneiadolaelaps* Ewing, but differs from it in having the body sculptured above and the legs and body clothed with stout, spinelike setae.

MACROLAELAPS PERUVIANUS, new species

PLATE 2. FIGURES 5, 6

A large, robust species; body sparsely clothed with short, spine-like setae. Chelicerae large and powerful; brush of setae near base of movable chela present; fixed chela equal to movable one, curved, with three teeth and a straight, noninflated seta; movable chela strongly curved, with two teeth. Sternal plate about as broad as long, anterior and lateral angles acuminate, posterior margin broadly notched, pores conspicuous, sternal setae very long, curved, subequal. Endopodal plates distinct, much longer than broad; endopodal setae equal and similar to sternal setae. Genitoventral plate longer than broad, only slightly inflated posteriorly, setae on same equal and similar to sternal setae. Anal plate small for the size of the mite, broadly rounded in front; anal opening central, much longer than broad; paired anal setae much smaller than the unpaired one and situated on the level of the center of anal opening. Legs stout; femur and patella of first pair each with a seta-bearing dorsal protuberance; second pair of legs considerably stouter than the others; all coxae spine-bearing. Length of female, 1.9 mm; width, 1.25 mm.

Type host.—"Wild rat."

Type locality.—Lima, Peru.

Type slides.—U.S.N.M. no. 1072.

Remarks.—Described from eight females taken as follows: Two from type host at type locality, by Dr. C. R. Eskey (no. 22); three by the same collector from "mice and rat", Peru, 1931; three by same collector from "wild rats", Peru, 1930. A very distinctive species.

HEMILAELAPS, new genus

Body stout, but oval in shape, not subcircular, not thickly beset with short setae, and not sculptured dorsally. Chelicerae without brushes of setae, fixed arm without recurved, fanglike setae. Sternal plate of female broad and with three pairs of setae; genitoventral plate longer than broad, not reaching anal plate, anterior margin indefinite, and bearing a single pair of setae; anal plate subtriangular, about as broad as long, with two paired and one unpaired setae. Legs stout; none calcarate; second and third coxae each with a stout, short, curved, sausage-shaped spine.

Type species.—*Hemilaelaps americanus*, new species.

Remarks.—This genus is rather closely related to *Neolaelaps* Hirst, from which it differs in having a normal instead of a greatly enlarged peritreme, and in having only a single pair of setae on the genitoventral plate instead of three pairs.

HEMILAEELAPS AMERICANUS, new species

PLATE 3, FIGURE 1

General appearance similar to that of a species of *Liponyssus*, the dorsal plate not covering the body, which in turn is almost bare of setae. Chelicerae of the type of the genus *Laelaps*; movable chela slightly curved, with three teeth; fixed chela almost straight, with two teeth. Sternal plate broader than long, anterior margin indefinite, posterior margin outwardly rounded; sternal setae short, curved, subequal, and arranged in two diverging lines. Endopodal plates indefinite; endopodal setae similar to sternal setae. Genitoventral plate about twice as long as broad, broadly rounded behind. Anal plate large, subtriangular. Legs stout; second pair not enlarged; femur I with spinelike setae above; coxae I and II each with a short, stout, sausage-shaped spine. Length of female, 0.64 mm; width, 0.33 mm.

Type host.—*Drymarchon corais melanurus*.

Type locality.—Brownsville, Tex.

Type (holotype) slide.—U.S.N.M. no. 1073.

Remarks.—Described from a female specimen taken from the type host, a snake—the indigo racer—collected at the type locality by Grace Wiley, April 12, 1930 (Bishopp no. 13900). This species, the type of its genus, combines the characters of the genera *Laelaps* and *Liponyssus*.

HEMILAEELAPS DISTINCTUS, new species

PLATE 3, FIGURE 2

Body stout; ventral plates poorly sclerotized, integument practically devoid of setae. Chelicerae moderate in size; movable chela with two teeth exclusive of terminal hook; fixed chela almost straight, with a single tooth and a small noninflated seta, ending in a clawlike hook. Sternal plate about as broad as long, front margin strongly convex, posterior margin concave, anterior angles acuminate; sternal setae very small, arranged in two divergent rows. Genitoventral plate about twice as long as broad, but slightly inflated posteriorly, with two pairs of setae. Anal plate large, subtriangular, anus small, situated slightly in front of center; anal setae small, subequal. Legs short; femora I and II each somewhat inflated and bearing above a few spinelike setae; all coxae large, those of first and second pairs of legs each bearing a short stout spine. Length of female, 0.6 mm; width, 0.31 mm.

Type host.—*Elaphe obsoleta*.

Type locality.—Kentucky.

Type slide.—U.S.N.M. no. 1074.

Remarks.—Description based on five females taken from the type host, a black snake, from type locality, by R. E. Stadelman, September 29, 1927. This species differs from *H. americanus*, new species, in the characters of the chelicerae, the shape of the sternum, and a few other particulars.

Family DERMANYSSIDAE

Subfamily LIPONYSSINAE

Genus TETRAGONYSSUS Ewing, 1923

Body stout but longer than broad and clothed with spinelike setae; dorsal plate large, undivided. Chelicerae reduced, pointed as if for piercing. Sternal plate very broad, with three pairs of stout setae and tending to ankylose with endopodal plates; genitoventral plate large but not reaching anal plate; anal plate subtriangular, with two anterior, paired setae and one posterior, unpaired seta. Legs stout, particularly the first and second pairs; femora I and II enlarged and bearing dorsally long, stout, spinelike setae; tarsal claws small.

Type species.—*Liponyssus gigas* Oudemans, 1912.

Remarks.—This genus is very near *Myonyssus* Tiraboschi, 1904, and it is probable that it will need restriction in the future to characters some of which have in the past been considered as specific for its type species.

TETRAGONYSSUS MICROTI, new species

PLATE 3, FIGURE 3, 4

Female.—Body short, almost subcircular. Chelicerae rather stout; movable chela curved and irregularly bifurcate at tip; fixed chela almost straight and ending in a minute, strongly curved, sharp hook. Sternal plate in the form of a strongly curved arch; sternal setae large, arranged in two diverging rows. Endopodal plates well sclerotized, extending forward and matching sternal plate; endopodal setae similar to sternal setae. Genitoventral plate large, about as broad as long, bearing four pairs of setae, the anterior pair being discal and the others marginal. Anal plate small; anus situated near front margin of anal plate; anal setae large, subequal, the unpaired one situated at apex of anal plate. Legs very stout: posterior pair longest; each femur and patella of the first two pairs of legs with conspicuous dorsal spines; coxae large, without peglike spines. Length, 0.51 mm; width, 0.38 mm.

Male.—Sternoventral plate about twice as long as its greatest width, width at sternal region equal to width at abdominal region, narrowest between the posterior coxae. Movable chela of chelicerae

a long bladeliike structure, grooved and ending in a spurlike process; fixed chela absent. Length, 0.45 mm; width, 0.3 mm.

Type host.—*Microtus californicus*.

Type locality.—Los Angeles, Calif.

Type slide.—U.S.N.M. no. 1075.

Remarks.—Description based on three females and two males from type host, a meadow mouse, at the type locality, April 1926 (U.S. Public Health Service), and three females from a young *Microtus* sp., Flat, Alaska, March 29, 1925, by A. H. Twitchell.

Genus CERATONYSSUS Ewing, 1923

Body much longer than broad and sparsely clothed with short setae. Dorsal plate of female divided, posterior part large, not circular. Chelicerae shearlike, adapted for piercing. First segment of palpus of female with a hornlike process. Sternal plate broader than long, with three pairs of setae; genitoventral plate small, with indefinite anterior margin and a single pair of setae; anal plate broadly rounded in front, with two anterior, paired setae and one posterior, unpaired seta. Legs somewhat stout, second pair but slightly, if at all, enlarged; one or more spines on all coxae, except those of first pair.

Type species.—*Dermanyssus musculi* Koch, 1836.

Remarks.—This genus is nearest *Ophionyssus* Mégnin, 1884, but differs from Mégnin's genus in having a large posterior section of the dorsal plate and three pairs of setae on the sternal plate instead of two.

CERATONYSSUS OCCIDENTALIS, new species

PLATE 3, FIGURE 5; PLATE 4, FIGURE 1

Anterior dorsal plate about as long as, but much broader than, posterior one, subtriangular, and bearing about 20 setae; posterior dorsal plate broadest in front, pointed posteriorly, and bearing about 25 setae. Chelicerae very slender; movable chela stouter and shorter than the fixed one, which is very slender. Sternal plate much broader than long, poorly sclerotized except for a heavy, arched band along the posterior margin; anterior corners acuminate; front pair of sternal setae marginal, last pair situated at apices of posterior angles. Endopodal plates absent; endopodal setae longer than sternal setae. Genitoventral plate reduced, angulate, its single pair of setae submarginal. Anal plate egg-shaped in outline; anus near front margin; paired anal setae situated opposite center of anus, unpaired seta situated about two thirds the distance from anus to apex of anal plate. Legs moderate in length; posterior pair long-

est; coxae large, all but those of first pair bearing at least one spine. Length of female, 0.77 mm; width, 0.46 mm.

Type host.—Bat, (?) *Myotis* sp.

Type locality.—Adel, Oreg.

Type slides.—U.S.N.M. no. 1076.

Remarks.—Described from four females mounted on two slides, taken from "common brown bat" at the type locality, August 19, 1930, by Rosaline R. Walker (Bishopp no. 14849).

Subfamily DERMANYSSINAE

Genus DERMANYSSUS Dugès, 1834

Body stout, integument leathery and capable of much distension. Chelicerae of female very long and needlelike, chelae absent; chelicerae of male modified. Palpi simple, without spines or processes. Dorsal plate of female large, entire, frequently poorly sclerotized. Anal plate broadest near its anterior border, not egg-shaped in outline, with an anterior pair of setae and a posterior unpaired seta; anal opening not circular, situated in posterior part of anal plate. Legs rather slender, second pair never greatly enlarged.

Type species.—*Acarus gallinae* DeGeer (1778).

Remarks.—*Dermanyssus* Dugès and *Allodermanyssus* Ewing, 1923, are the only genera in the subfamily Dermanyssinae. *Dermanyssus* differs from *Allodermanyssus* in that the dorsal plate of the female is entire and the anal plate is not egg-shaped in outline and has the opening in the posterior part.

DERMANYSSUS EVOTOMYDIS, new species

PLATE 4, FIGURE 2

Body shape and texture of skin typical of the genus. Peritreme extending forward slightly beyond the second coxae. Palpi stout, not surpassing the front femora. Chelicerae very slender, but at the tip of each there is a slight swelling with a few minute teeth laterally. Sternal plate over three times as broad as long, arched. Genito-ventral plate about twice as long as broad, very slightly broadened posteriorly. Anal plate slightly longer than broad, of a shape typical of the genus; anal opening over twice as long as broad, situated about half its longest diameter from posterior margin of anal plate. Legs rather slender; first and last pairs subequal and slightly longer than the others. Length of female, 0.86 mm; width, 0.62 mm.

Type host.—*Evotomys* sp.

Type locality.—Mount McIntyre, N.Y.

Type (holotype) slide.—U.S.N.M. no. 1077.

Remarks.—Described from a female taken from the type host, a red-backed mouse, at the type locality, by Francis Harper, July 25, 1925. This species differs from our other known American species of *Dermanyssus* in having the chelicerae inflated and toothed at their apices.

DERMANYSSUS PROGNEPHILUS, new species

PLATE 4, FIGURE 3

Similar in appearance to the common chicken mite, *Dermanyssus gallinae* (DeGeer). Peritremes extending forward to opposite the first pair of coxae. Palpi reaching to slightly beyond the middle of first patellae. Chelicerae exceedingly long and slender, when fully extended reaching to the middle of the first tarsi, not broadened or toothed distally. Sternal plate poorly sclerotized, constituting a transverse arched band. Anal plate longer than broad, almost egg-shaped in outline; anal opening twice as long as broad and situated a little over one half of its greatest diameter from the posterior border; paired anal setae situated slightly in front of a transverse line drawn through middle of anus; unpaired seta similar to paired ones and situated halfway between posterior border of anus and posterior border of anal plate. First and last pairs of legs of about the same length and longer than the others. Length of female, 0.82 mm; width, 0.42 mm.

Type host.—*Progne subis*.

Type locality.—Bell, Md.

Type slide.—U.S.N.M. no. 1078.

Remarks.—Described from two females, which formed part of a lot of five individuals (two at least being nymphs) taken from the nest of type host, the purple martin, at the type locality by W. L. McAtee, September 23, 1926. This species is near *Dermanyssus gallinae* (DeGeer) but has longer peritremes and a differently shaped anal plate.

Subfamily RHINONYSSINAE

SOMMATERICOLA Trägårdh, 1904

Body very stout; integument leathery. Chelicerae rather stout, of the piercing type, teeth absent, movable chela clawlike. Palpi very short and stout, provided with a few spines. Spiracles situated dorsally. No dorsal plate present. Legs exceedingly short and stout, subequal; tarsal claws small, subequal; coxae stout, without spines.

Type species.—*Sommatericola levinseni* Trägårdh, 1904.

Remarks.—Females of *Sommatericola* have the same type of chelicerae as those of the monkey-infesting genus *Pneumonyssus* De

Haan and Grijns, 1901. However, *Sommatericola* is more closely related to the bird-infesting genera *Rhinonyssus* Trouessart, 1894, and *Sternostomum* Berlese, 1889, from which it differs in the absence of the dorsal plate.

SOMMATERICOLA ORIENTALIS, new species

PLATE 4, FIGURE 4

Body naked, almost twice as long as broad. First segment of palpus very long, as long as the other four segments taken together and largely united to cephalic cone. Cephalic cone reaching to middle of third segments of palpi. Chelicerae stout for the genus; movable chela long, curved; fixed chela not in a position for proper observation. Sternal region without plate; sternal setae six, subequal, arranged in two diverging rows. Anal plate small, broadly rounded in front; anus small, situated centrally; anal setae small. Legs stout, almost subequal, the first and last pairs slightly longer than the others. Tarsal claws large, strongly curved, and very sharp. Length of female, 0.75 mm; width, 0.44 mm.

Type host.—*Lanius nigriceps longicaudatus*.

Type locality.—Bangkok, Siam.

Type (holotype) slide.—U.S.N.M. no. 1079.

Remarks.—Described from a female specimen taken from skin of host, a shrike (U.S.N.M. no. 308292), which was collected at the type locality in 1926.

Family UROPODIDAE

CYCLACARUS, new genus

Nymphal characters as follows: Body a flattened disk with mouth parts concealed from above. Chelicerae chelate, of generalized type. Palpi short, filiform. Stigmata very large and situated in very heavily sclerotized peritremes on lateral margins of the body in front of first pair of coxae. Sternal plate occupying sternal area between coxae of last three pairs of legs, with a pair of pores. Anal plate very large, broader than long, with a small anal opening and two pairs of setae. Legs slender, porrect, with large, diverging, subequal, sharp claws; first pair of legs enclosed in camerostome.

Type species.—*Cyclacarus aberrans*, new species.

Remarks.—The nymphal specimens upon which the type species of this genus is based are exceedingly unusual in having such large stigmata and peritremes and in having the same situated so far forward, in the position of the legs, and finally in the habitat they occupied on the tail feathers of a chimney swift.

CYCLACARUS ABERRANS, new species

PLATE 4, FIGURES 5, 6

Body a large, flat disk provided with only a few minute setae. Epistome a fine, delicate, feathery process. Palpi short, simple, without processes or tubercles. Chelicerae very long, arising in posterior part of the body; chelae short; movable one curved and of a shape usual to the family; fixed one with two toothlike processes at the tip. Sternal plate large, twice as long as broad, occupying most of the sternal area and possessing a pair of pores situated a little behind the middle. Anal plate very large, angulate in front, broadly rounded behind, studded with the openings of integumentary pores, bearing a conspicuous pair of posterior, submarginal setae, and occupying most of the ventral surface of the abdomen. Metapodal plates very large, extending forward to in front of the third pair of coxae, thickly studded with pore openings. Peritremes exceedingly large and sclerotized and extending *backward* from each spiracle. Spiracles situated on lateral margins of body far forward, even *in front* of mouth parts. Legs slender; first pair smaller than the others and situated in the same opening as the mouth parts; tarsal claws long, curved, divergent, and very sharp. Length of nymph, 1.49 mm; width, 1.33 mm.

Type host.—*Chaetura pelagica*.

Type locality.—West Chester, Pa.

Type (holotype) slide.—U.S.N.M. no. 1080.

Remarks.—Described from four nymphs taken as follows: One (holotype) from tail feather of type host, a chimney swift, collected at the type locality by D. Smiley, May 22, 1930 (Bishopp no. 18529); and three nymphs collected from the same host at the type locality by the same collector, May 4, 1930 (Bishopp no. 13905). This mite is not only remarkable for the situation in which it was taken (on the tail feathers of a swift), but its morphology is unusual in certain respects, particularly in the nature and position of the peritremes and in the presence of so many and such conspicuous integumentary pores.